THE GOLDSTONE-APPLE VALLEY RADIO TELESCOPE EDUCATION PROJECT

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The Goldstone-Apple Valley Radio Telescope project (GAVRT) is bringing "hands-on" scientific discovery to life in America's classrooms. Middle and high school students at participating schools remotely control a dedicated 34-m radio telescope at NASA's Deep Space Network Goldstone Complex. Connected via the Internet from their classrooms, they point the massive dish at natural radio sources, analyze the data and report their findings to Mission Control located at the Lewis Center for Educational Research in Apple Valley, CA.

A primary objective of the GAVRT project is to address the need to improve scientific literacy among America's youth. With the support and participation of NASA/JPL scientists and engineers in partnership with the staff and volunteers at the Lewis Center, GAVRT students and teacher are able to experience the real world of scientific research and discovery. Participating teachers are provided with comprehensive scientific curriculum, in-depth training opportunities and a growing library of teaching tools and technological resources.

Participating students study basic principles of radio astronomy, learn antenna operations and create detailed mission plans. With the first mission, Jupiter Quest, students plan a hypothetical space mission to the Jovian system. Built into the curriculum are experiments using the radio telescope to measure the temperature of Jupiter's atmosphere and observe the variations in the synchrotron emission from the radiation belts. In addition to Jupiter Quest, new curricula are being developed to map the microwave brightness of the sun and radio emissions near the galactic plane.

The GAVRT project is operated as a partnership involving NASA, the Jet Propulsion Laboratory (JPL), and the Lewis Center for Educational Research (Apple Valley, CA). The JPL portion of the research reported in this paper was performed by the Jet Propulsion Laboratory, California Institute of Technology, under contract with the National Aeronautics and Space Administration

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